



**Building 2 – Public Information  
for  
National Historic Preservation Act  
Section 106 Compliance  
April 27, 2011**

**National Aeronautics and Space Administration  
Goddard Space Flight Center  
Greenbelt, MD 20771**

## Introduction

The Goddard Space Flight Center (GSFC) is planning to deconstruct Building 2, the Research Projects Laboratory. Built in 1960, and modified many times since then, this lab and office building is beyond restoration and has clearly come to the end of its useful life in serving NASA's mission. Due to its design, current configuration, age, and condition, Building 2 no longer efficiently and effectively serves GSFC's current and future mission requirements. Adapting the building for current and alternate uses was evaluated and analyzed; however, quality and configuration issues made renewal a poor return on investment for the Center/Agency. Building 2 is located just north of Greenbelt Road and west of Building 1 and the Center's main gate (fig.1).

The Center wishes to capture and celebrate the history of Building 2 and the other outdated buildings. Section 106 of the National Historic Preservation Act prescribes a process to do this. This process includes public involvement. GSFC welcomes public comment on ways to best express the early history of Building 2.

## Plans To Deconstruct Building 2 – Overview

In accordance with Section 106 of the National Historic Preservation Act, Federal agencies take into account the effect of an undertaking such as demolition on any building that is included in or eligible for inclusion in the National Register. GSFC conducted research to determine the history of the development and use of Building 2 and evaluated its eligibility for listing in the National Register of Historic Places. The results of this research stated that Building 2 of the GSFC campus is potentially eligible for the National Register under Criterion A in the areas of science and exploration as part of a historic district. The building represents the important achievements of a body of scientists and technicians that occupied the office and laboratory spaces.

GSFC intends to work with the appropriate parties to seek ways to avoid, minimize, or mitigate any adverse effects. Additionally GSFC will consider the views of the public on preservation issues when making final decisions that affect historic properties. NASA acknowledges that the proposed deconstruction of Building 2 would be considered an adverse effect under the Act and seeks input and comments from the public stakeholders as to how to avoid, minimize, or mitigate any adverse effects on historic properties and ways to best capture and express Building 2's history.

## The Decision to Deconstruct

The decision to no longer utilize Building 2 was first expressed in the 2002 Center Master Plan. This master plan was reviewed and accepted by the National Capital Planning Commission and the community at large. Building 34, the Exploration Sciences Building, was constructed in 2010 to renew GSFC science capabilities for the 21<sup>st</sup> century. The vast majority of science activities and operations on Building 2 were relocated to the new building. At that point, the Center minimized investments in Building 2, focusing scarce resources on assets that would serve the Agency's mission in the longer term.

Deconstructing Building 2 is consistent with Federal, Agency, and Center objectives to eliminate unnecessary and poorly-performing assets, to reduce facility area and current replacement value wherever possible, and to minimize the cost of correcting deferred maintenance conditions. These objectives were prescribed in two requirements: A Presidential Mandate (Management Procedures Memorandum No. 2010-07) requiring all Federal agencies to develop a plan to dispose of unneeded federal real estate in order to cut operating costs, and improve energy usage, and the NASA Office of Strategic Infrastructure - facilities renewal and modernization goals: Sustain capabilities to meet current and future mission requirements, and accommodate those capabilities in fewer, more efficient facilities. Maximize mission effectiveness by improving workplace quality/configuration, and reduce facility assets value by 10% by 2020, 15% by 2050. In addition, GSFC made Building 2 available to States, local government, and nonprofit organizations (Title V of the McKinney-Vento Homeless Assistance Act) to provide shelter for the homeless. However, there were no affirmative replies.

### An Outline History of the Decision

- 1997 – Discussions began to construct a new building (Exploration Science Building - B34)
- 2002 – Partnering and Outreach Zone proposed in 2002 GSFC Facilities Master Plan (which also proposed campus neighborhoods (fig. 2)).
- 2003 - The Agency held a competition to award two centers with the authority to conduct a pilot project for the use of Enhanced Use Lease (EUL) Agreements. GSFC proposed Building 2 as a candidate but was not selected.
- 2004 – Executive Order 13327, Federal Real Property Asset Management.
- 2004-2007: The Agency informed centers of its intention of extending EUL authority to all centers pending congressional concurrence; however, such authority was not approved.
- 2005 – Evaluation and plans to demolish Building 2 started.
- 2007 - Construction begins on Building 34.
- 2009 – Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance (contains requirements to reduce facilities and energy costs).
- 2010 – Presidential Memo – Disposing of Unneeded Federal Real Estate.
- 2010 – Construction of Building 34 completes. Building 2 completely vacated.
- 2010 – Per Federal real property excess procedures of Title V, Building 2 was offered to other Federal agencies via publication on the Federal Register.
- 2010 - GSFC sent memo to NASA HQ documenting intent to take down Building 2.
- 2011 – Plans move forward to deconstruct Building 2.

## **Comment Period**

NASA/GSFC seeks public comments on the proposed deconstruction and ways to mitigate this adverse effect. Possible mitigations could include such things as an educational display at the GSFC Visitor Center or a plaque commemorating the scientific discoveries and the scientists who worked in this building. This document will be posted on public view at local libraries. The period for public comments is between April 29, 2011, and May 29, 2011. NASA/GSFC will address all the comments received by May 29, 2011.

## **Contact Information**

The Center requests that public comments be sent via electronic mail or direct mail. Send electronic mail to [gsfc-220-bldg2-public-comments@mail.nasa.gov](mailto:gsfc-220-bldg2-public-comments@mail.nasa.gov) or mail to:

NASA Goddard Space Flight Center  
Cultural Resources Management Program, Code 221  
Greenbelt, MD 20771

## Background Information

The arrival of the space age and the creation of NASA made apparent the need for new infrastructure to organize and manage projects that involved thousands of people and millions of dollars. NASA's several research and development centers located throughout the country could only accommodate projects of a much smaller scale than new programs would require. Consequently, there was a need for new research centers expressly devoted to space projects.

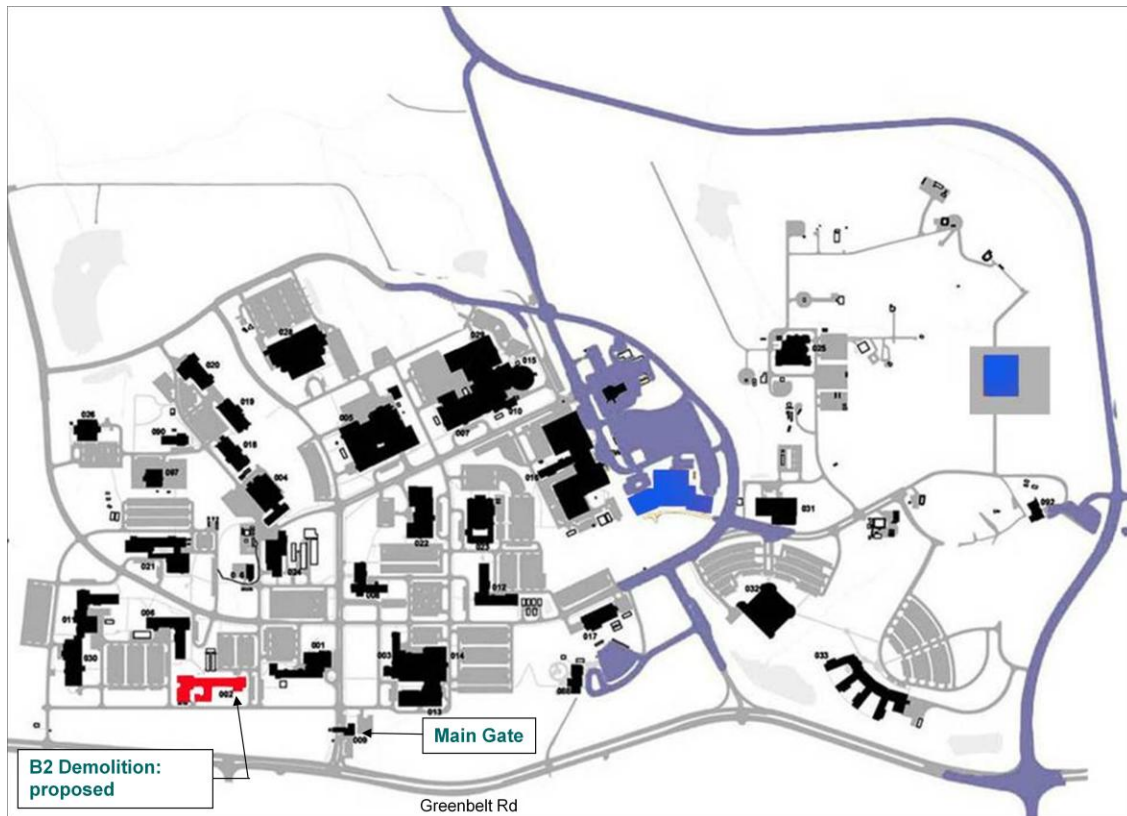
Completed in September 1960 Building 2 was GSFC's second building. Building 2, constructed as the Research Development Laboratory/Space Sciences Center, housed the Space Sciences Division for NASA. The GSFC was created by NASA in 1959 to design and test unmanned objects launched into space, a mission that continues to the present day. Building 2, vacant since 2010, is one of over 34 major buildings that presently occupy the campus.

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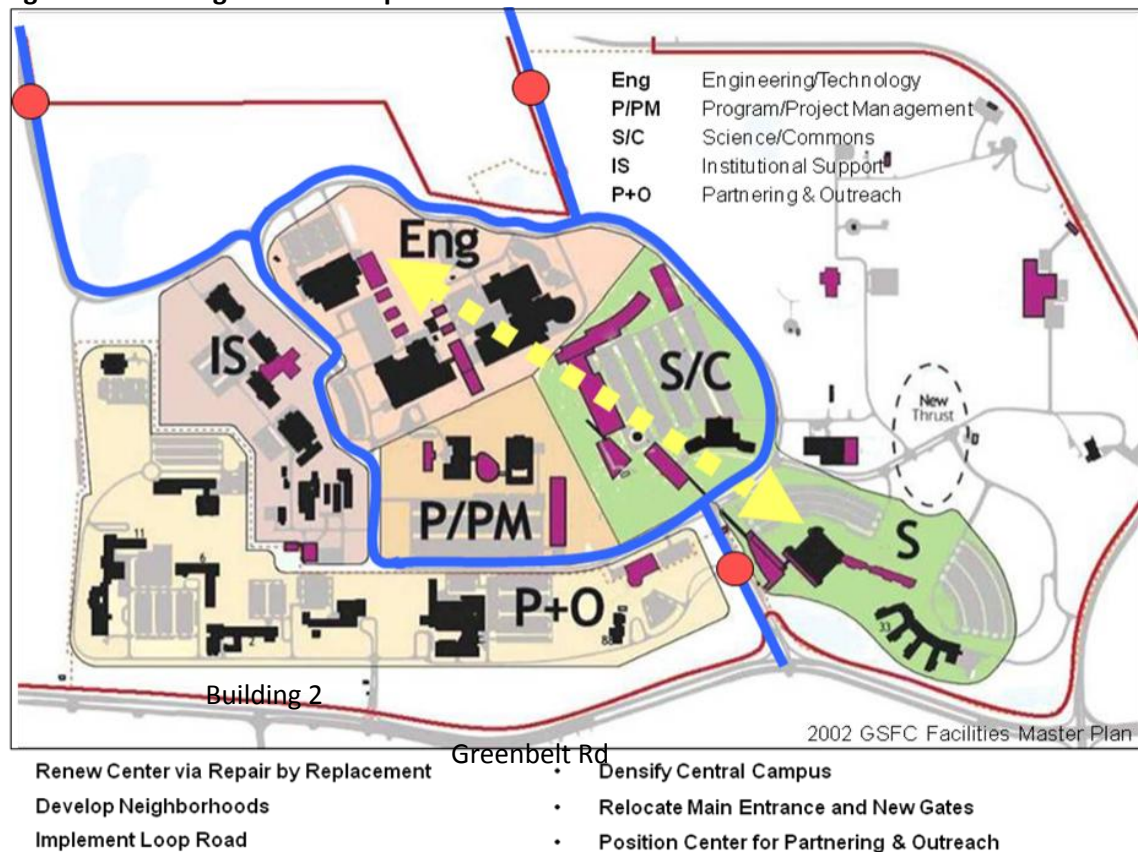
GSFC's 2002 Center Master Plan was reviewed and approved by the National Capital Planning Commission (NCPC) and the public. It is a 20-year look-ahead that enables the Center to strategically plan when and where our buildings are built, operated, maintained, renewed, or closed over time.

The Goddard Space Flight Center, located in Greenbelt, Maryland, is the Agency's Center of Excellence for scientific research. GSFC conducts a broad range of activities in scientific research and development. To successfully perform this mission, GSFC facilities must serve the scientists, engineers, and professional staff who conduct Goddard's far ranging activities. GSFC scientists and engineers require specialized facility resources in laboratories, cleanrooms, state-of-the-art computers, spacecraft testing, instrument building, laser ranging, and materials coating. GSFC houses some of the world's fastest supercomputers and is home to a unique combination of facilities such as optics, detector development, and nano satellite technology laboratories essential to Goddard's science and technology mission.

The Greenbelt site serves about 8,500 civil servants and contractors in 34 major buildings and over 50 minor buildings totaling nearly 3.6 million square feet. The site, about 15 miles northeast of Washington DC, includes about 1270 acres of property.



**Figure 1 – Building Location Map**



**Figure 2 - Partnering & Outreach Zone (P&O from 2002 Center Master Plan)**

## **Building 2 (excerpt from Building 2 Historical Survey - Frankie Friend & Associates, Inc., March 2011)**

### **Exterior Description**

Building 2 measures three stories (ground, first and second) in height with a metal-clad penthouse on the roof (fig. 3, 5, 6, 7). The original 1960 block consists of a rectangular footprint that stretches from east to west, with an original ell extending from the south elevation. The building includes three large additions constructed in 1967, 1986, and 1993, on the south and west elevations.

The building rests on a poured-concrete foundation and is capped by a gravel and tar-clad roof. The exterior walls of the original block are clad in brick at the east and west elevations as well as below the first-story window openings, above the third-story window openings, and at the ends of the north and south elevations. Vertical metal panels surround each window in the north and south elevation, while textured masonry that appears to be an exterior insulation finishing system is located above each window opening. The windows are primarily fixed-sash, anodized-aluminum types that were installed in 1995. The current exterior metal panels and windows were installed in the mid 1990's.

A two-story brick and metal addition was constructed in 1993 on the south elevation of the 1967 west ell to accommodate a high bay (a place for conducting and assembling large experiments and equipment). The high bay occupies the southwest corner of the addition. A large overhead metal door occupies the westernmost bay in the south elevation and denotes the 1995 loading dock addition to the high bay. The loading dock addition is offset from the south elevation.

A 1986 brick addition conceals the west elevation of the original block. The addition includes a loading dock that was constructed on the south elevation of the original block and features a large metal overhead garage door and concrete loading platform.

### **Interior Description**

The interior of Building 2, as originally intended and designed, has been continuously altered and updated in order to adapt to the changing technologies and advancements of the types of experiments and research carried out by the scientists, engineers, and technicians located inside the building from the time of its original occupancy in 1960 (fig. 8, 9, 10, 11) until it was vacated in 2010. Most of the original equipment, except where noted, has been removed; however, many of the original building materials, particularly in the laboratories of the original 1960 block, remain. Furthermore, the building retains many of the features that made it a usable space, such as the movable partitions between the laboratories, large window openings, and capabilities within the laboratory space for compressed air, gas, electric, water, and drainage.

The original block of Building 2 retains its overall interior spatial division. Primary access into the building is through the east elevation entry vestibule, with secondary entries located in the north elevation of the original block and west elevation of the 1986 addition. The primary entry vestibule contains rubber flooring that conceals the original terrazzo flooring underneath. The original block is set up essentially the same way on each floor, with a long central corridor that divides laboratory space to the north and offices to the south. Large multi-room suites are located in the four-story ell at the southeast end of each floor, and historically served administrative purposes. These suites largely contain replacement materials, including glass and aluminum doors, industrial carpeting, and dropped acoustic-tile ceilings with inset fluorescent lighting. Each floor also contains restrooms, janitor's closets, and electrical equipment rooms,

all original to the design of the building, although the materials and finishes in the restrooms have been updated as well as the electrical equipment. Elevators and stair wells provide access to the various levels. The 1960 stairwell retains terrazzo treads and landings, tile walls, and a wooden handrail.

The majority of the interior doors of the original block remain. The laboratories are accessed by double-leaf metal doors comprised of a full-size pedestrian door paired with a narrower single-leaf door in order to accommodate larger equipment in and out of the room. The office doors consist of single-leaf pedestrian types. Many of the original building materials remain, particularly in the laboratory spaces. These largely consist of nine-inch asbestos floor tiles, metal or rubber baseboards, and concrete ceilings with suspended metal lighting. Some laboratories feature panels of acoustic tiles on the ceiling. Where lab spaces have been converted to use as clean rooms, the ceilings feature dropped acoustic-tile with inset fluorescent lighting. The interior walls of the laboratories are composite board panels, which could be moved in order to accommodate larger or smaller laboratory space as needed. Several laboratories throughout each floor retain the original metal washing sink, mounted metal cable races on the ceiling for carrying computer instrumentation prior to the use of fiber optic cables, wall filters/vacuums for clean rooms, and ceiling-mounted ¼-ton cranes. Some of the laboratories also feature the original interior metal and wood wall shelving, coat niches with metal hooks, and large hooks attached to the ceiling used to accommodate pulley systems for lifting heavy equipment. Some of the original blackboards also remain in both the laboratories and office spaces.

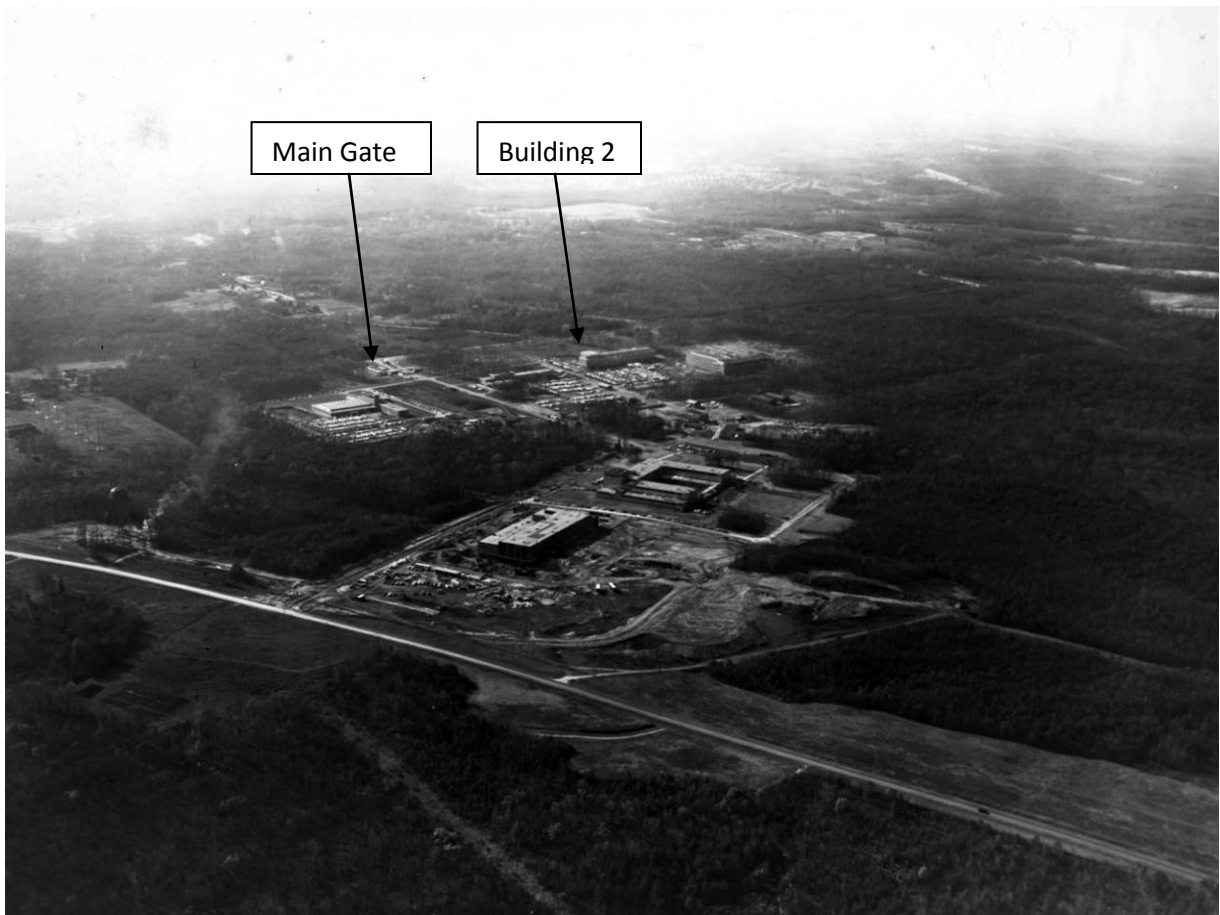
Interior alterations include the application 12-inch vinyl tile throughout the corridors as well as in some of the laboratory spaces, industrial carpeting in many of the office spaces and first-floor conference room, as well as dropped acoustic-tile ceilings with inset fluorescent lighting in the offices, corridor, and in some of the laboratories. In addition, the former accelerator room on the ground floor and the computer wing on the second floor of the 1986 addition have been fitted with raised wood panel flooring in order to accommodate computer cables and equipment beneath.

The penthouse, which accommodated the soft x-ray accelerator built by the High-Energy Astrophysics Division and storage spaces, is largely intact. At the south end of the roof, the test chambers on the east side and the target chamber on the west side remain as well as the metal brackets that were used to hold the 12-inch diameter vacuum tube which connected the two chambers. The accelerator was removed in 1985. The floors are comprised of poured-concrete, with vinyl tile located in the two chambers that housed the accelerator equipment. The walls and ceiling consist of exposed metal sheeting. Large metal cages used for storage are still present in the north end of the penthouse and mechanical equipment is also present.

### **Integrity**

Building 2 retains its original location and setting near the southwest corner of the GSFC campus, adjacent to Aerobee Road. The building has undergone alterations to the exterior, including the construction of additions and application of replacement wall cladding, so that integrity of design, workmanship, and materials has largely been compromised on the exterior; however, integrity of design is retained on the interior through the retention of the laboratory/office spatial division of the original block. The retention of the interior layout, asbestos tile floors, movable wall partitions, wide window openings, and starkness of the laboratory spaces culminate in sufficient integrity of materials, design, association and feeling to convey Building 2's former use as a research and science building.





**Figure 3 – Campus – 1961**



**Figure 4 – Future Campus**

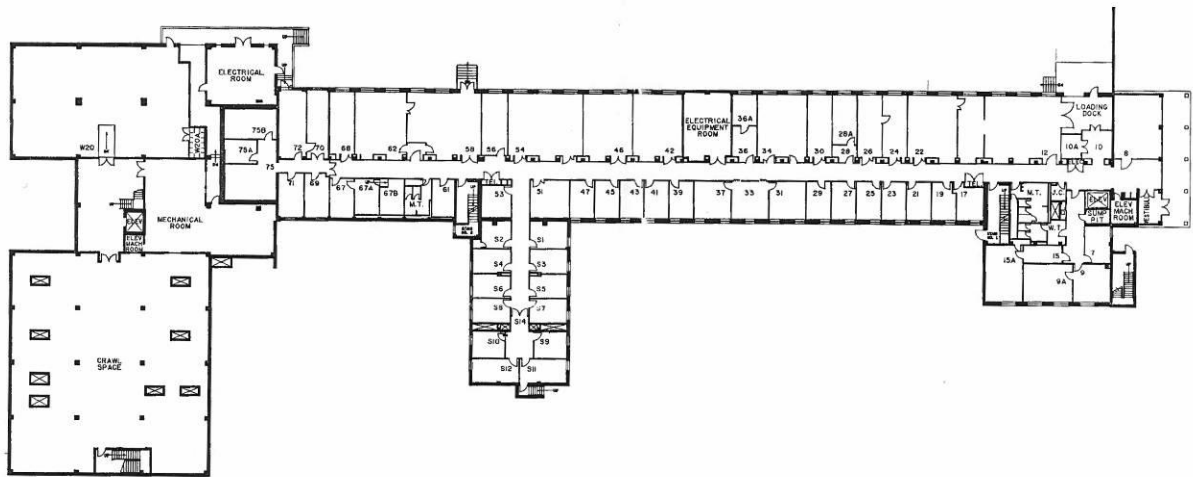


Figure 5 - 1960 Plan



Figure 6 - B2 East Elevation





**Figure 7 – B2 South East Corner**



**Figure 8 – B2 Interior Corridor**



**Figure 9 – Former Laboratory**



**Figure 10 – B2 Former laboratory**



Figure 11 – B2 Former Office